SUP'AIR

ACRO 3 manual

Harness ACRO 3

18/06/2013 English

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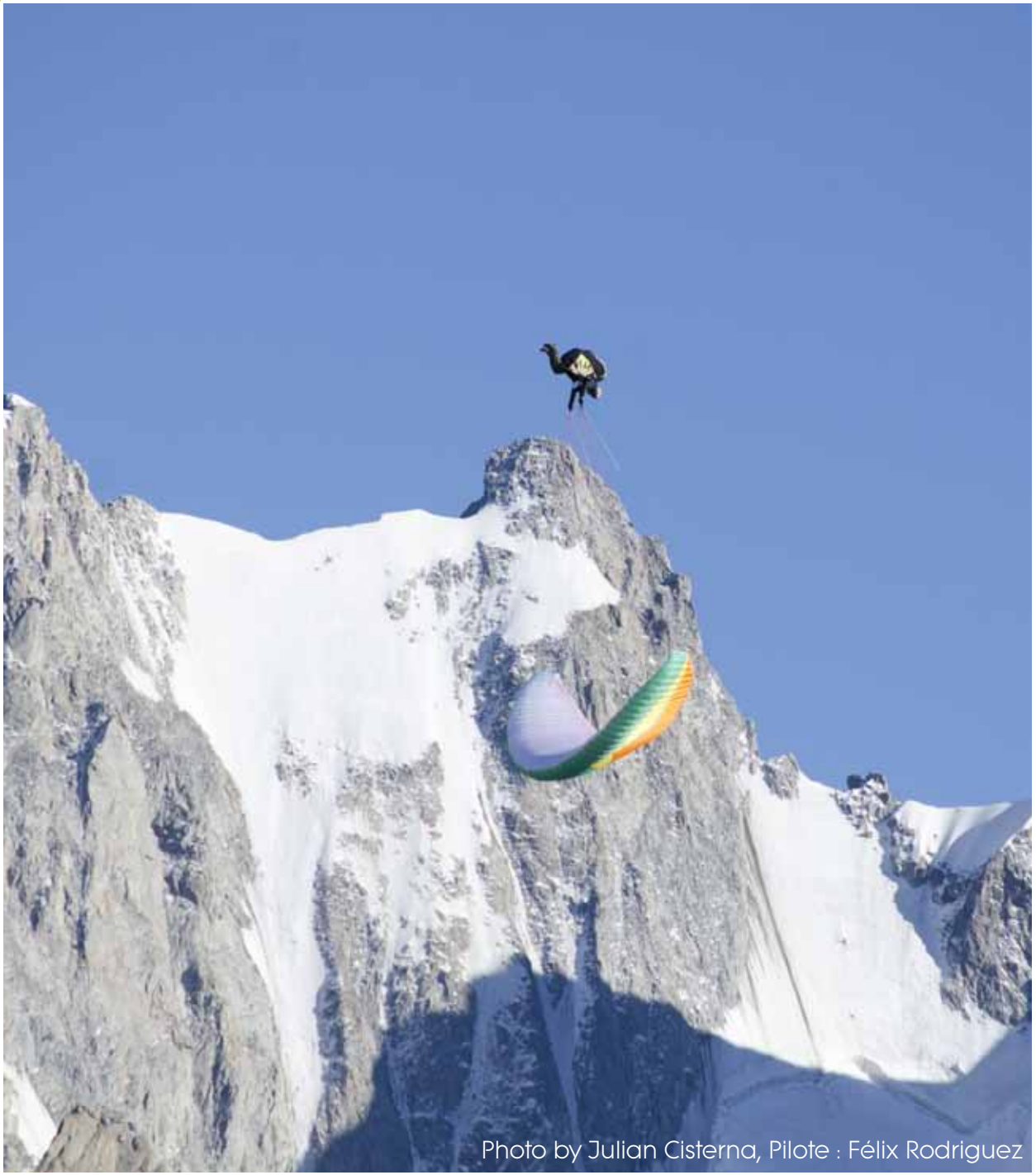
Photo by Julian Cisterna, Pilote : Félix Rodriguez

Thank you for your choice of an ACRO3 ! We are proud to join you on your journey in our common passion : paragliding.

SUP'AIR has been designing, producing and selling accessories for free flying activities since 1984. By choosing a SUP'AIR product you benefit from almost thirty years of expertise, innovation and listening. This is also our philosophy : working endlessly to develop better products and to maintain a high quality production in Europe.
We trust that you will find this user's manual comprehensive, explicit and hopefully pleasant to read. We advise you to read it carefully !

On our website www.supair.com, you will find the last up to date information about this product. If you have any further questions, feel free to ask one of our retailers. And of course, the entire SUP'AIR team are at your disposal through info@supair.com

We wish you many safe flying and enjoyable hours, and happy landings

The SUP'AIR team

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Introduction

If you are reading those lines, it is because you are eager to enter and seat inside your new toy to defy gravity with series of spectacular daring maneuvers or simply to escape the daily routine.

Before heading out, take the time to install your reserve parachute, and properly adjust your harness. These steps are of vital importance. Follow them before flying and for peace of mind.

After reading this manual, we suggest you check your harness by hanging in it before flying.

N.B : Three important icons will help you when reading this manual

Advice

Caution !

Danger !!

Technical specifications

A Backrest height (cm)

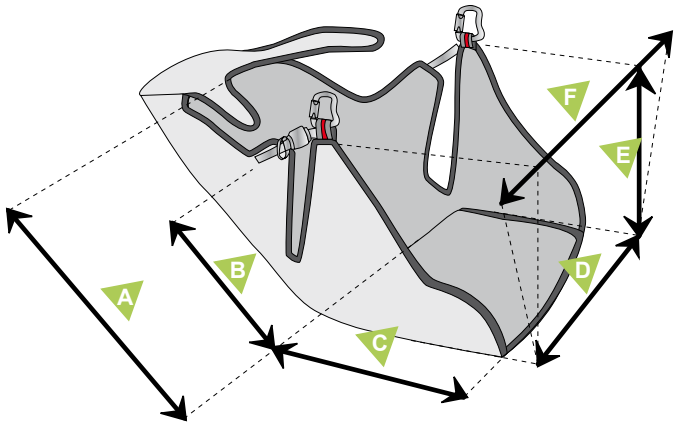
B Reclined seating height (cm)

C Seat length (cm)

D Seat width (cm)

E Carabiners height (cm)

F Carabiners distance (cm)



Model	ACRO3 S	ACRO3 M	ACRO3 L
Pilot size	155 - 165 cm	160 - 190 cm	185 - 200 cm
Pilot weight	<70 kg	65 - 85 kg	80 - 100 kg
Harness weight (+ carabiners+speedbar)	6,18 kg	6,29 kg	6,74 kg
Designed for	ACRO Paragliding (Aerobatics).		
Backrest height (cm)	70	73	78
Reclined seatting height (cm)	38	40	40
Seat length (cm)	42	42	45
Seat width (cm)	33	35	38
Carabiners height (cm)	43	45	48
Carabiners distance (cm)	41 - 52		
Seat plate size	33 x 34 cm	35 x 37 cm	37 x 37 cm
Impact damping system : Airbag (Volume)	No	No	No
Impact damping system : Bumpair (Thickness)	Yes - 17 cm	Yes- 17 cm	Yes- 17 cm
Certification	EN 1651 - LTF	EN 1651 - LTF	EN 1651 - LTF
Flight : tandem (Pilot- Passenger)	No	No	No
Flight : acrobatic flying	Yes	Yes	Yes
Take-off : Winching - towing	Yes	Yes	Yes
Quick-out carabiners compatibility	Yes	Yes	Yes

SUP'AIR manufactures its products in Europe. Most of the components used are **Made in Europe**.

Size choice

Choosing your harness size is important. You will find below a measurement chart to help with your selection. Nonetheless we advise you to try out the harness under a hanging device and in different sizes at one of our retailers in order to choose the correct size.

For a complete list of our retailers, please click here : www.supair.com

Size / Weight	1,45 m	1,50 m	1,55 m	1,60 m	1,65 m	1,70 m	1,75 m	1,80 m	1,85 m	1,90 m	1,95 m	2 m	2,05 m
50				S	S	S							
55			S	S	S	S							
60			S	S	S	S	Preliminary test under hanging device	M					
65			S	S	S	Preliminary test under hanging device	M	M	Preliminary test under hanging device				
70			S	Preliminary test under hanging device	Preliminary test under hanging device	M	M	M	L				
75				Preliminary test under hanging device	M	M	M	M	L	L			
80					M	M	M	Preliminary test under hanging device	L	L	L		
85						M	Preliminary test under hanging device	L	L	L	Preliminary test under hanging device		
90						Preliminary test under hanging device	Preliminary test under hanging device	L	L	Preliminary test under hanging device			
95							L	L	Preliminary test under hanging device				
100													
105													
110													

Preliminary test under hanging device

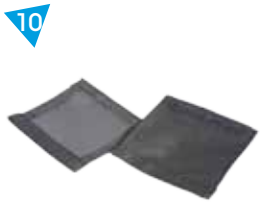
S

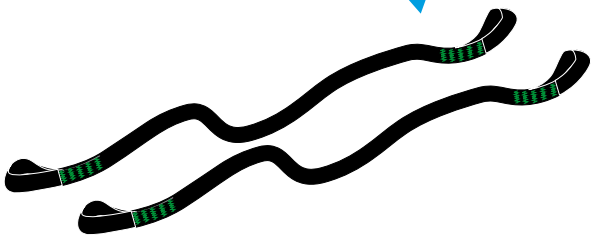
M

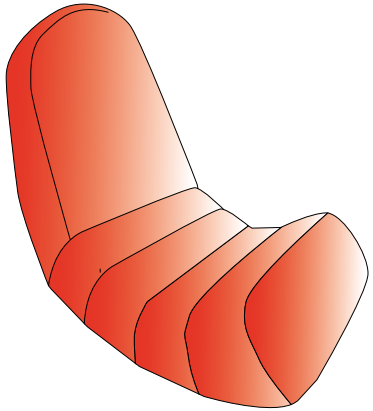
L

Nomenclature

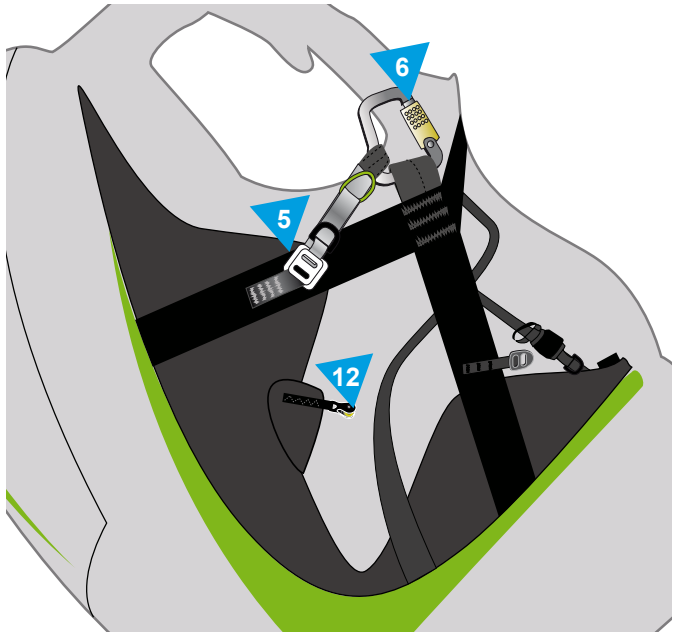
1. 1 ACRO3 harness
2. 1 Fiberglass reinforced wooden seat plate (ref : PLAACRO).
3. 1 1 BUMPAIR 17 cm
4. 1 Reserve parachute handle for pod located beneath the seat (ref : A3).
5. 1 Dorsal reserve parachute (ref : B2)
6. 2x 45 mm self-locking carabiners.
7. 1 Split risers (for reserve parachute located beneath the seat).
8. 1 Long foot-rest
9. 1 Strap protection kit
10. 2 Riser bridle adjustment holding sleeves

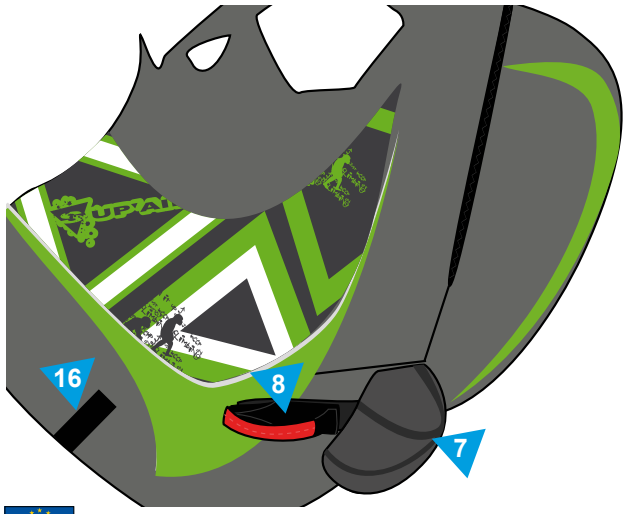






A single reserve parachute connection kit (riser set + 2 Maillons Rapides®) is included with the harness due to many pilots using Rogallo type reserve parachutes as their main rescue backup system. If you wish to install two round Apex type reserve parachutes inside your harness, you will need to order a second riser set + Maillons Rapides® .





Harness overview

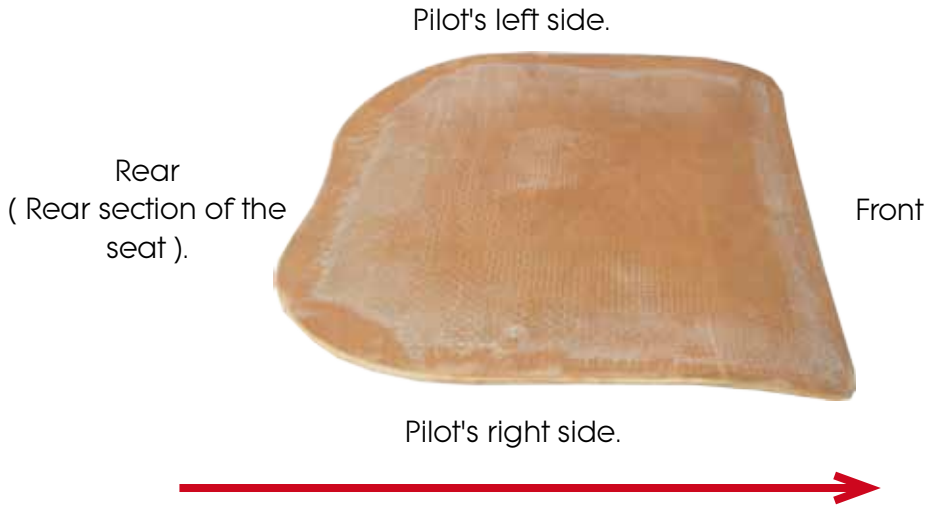
1. Chest strap quick release buckle.
2. Safe-T-strap.
3. Leg strap quick release buckle.
4. Chest strap adjustment.
5. Backrest tilt adjustment.
6. 45 mm self-locking carabiners.
7. Dorsal reserve parachute pocket
8. Dorsal reserve parachute handle
9. Reserve parachute handle for a pod located beneath the seat.
10. Reserve parachute container located beneath the seat.
11. Reserve parachute risers connection.
12. Speed system pulleys.
13. Accelerator cord (speed-bar system) grommet entry.
14. Accelerator cord (speed-bar system) grommet exit.
15. Stowing the accelerator and/or the foot-rest.
16. Velcro smoke-flare.
17. Small side storage pocket
18. Large dorsal storage pocket

SUP'AIR manufactures its products in Europe. Most of the components used are **Made in Europe**.

Accessories assembly

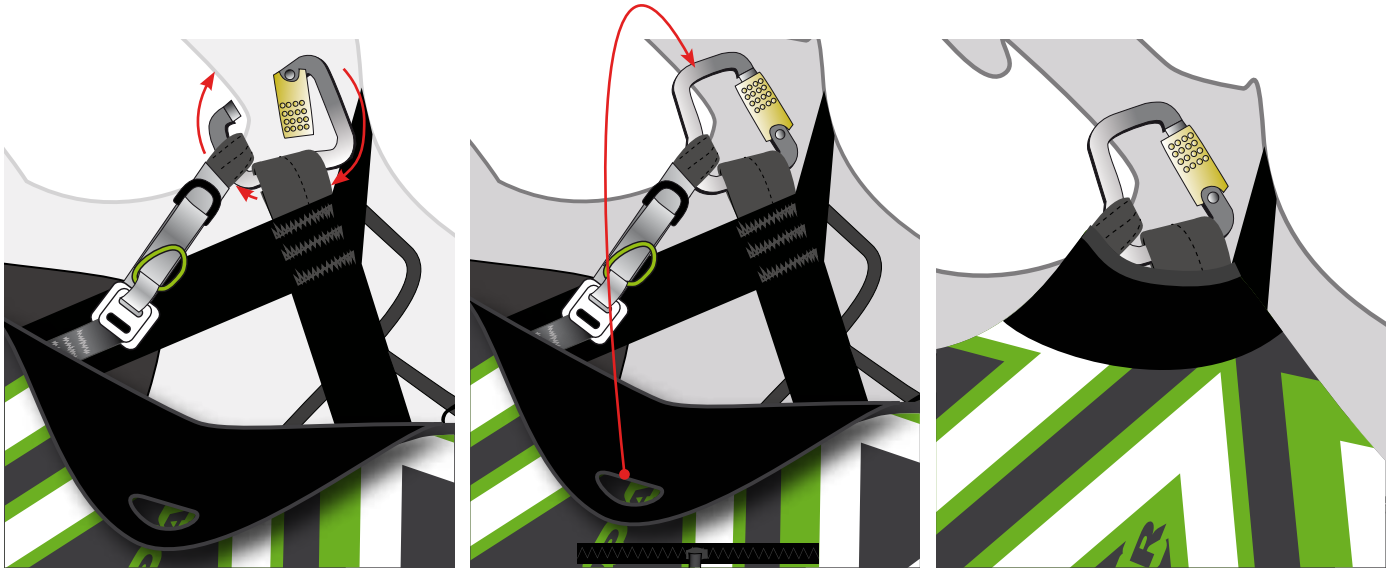
A Installing the ACRO 3 seat-plate.

1. Face the front of the harness and grab the rear section of the seating fabric area to pull it toward yourself.
Pull the leg straps to extend them and free up space to insert the seat-plate.
2. Place the front section of the seat-plate forward and slide it between the loosened leg-straps before pushing it fully to the end of the receiving pocket.



B Installing the carabiners.

1. To the main hooking point, followed by the backrest angle adjustment strap. Close the carabiner and lock its gate securely facing forward.
2. Push the carabiner through the webbing loop found inside the lateral skirt. 3. Push the carabiner all the way through the skirt's opening to make certain the hooking points are fully visible.



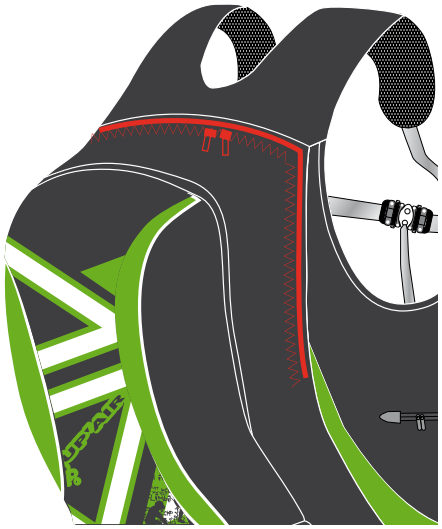
Accessories assembly

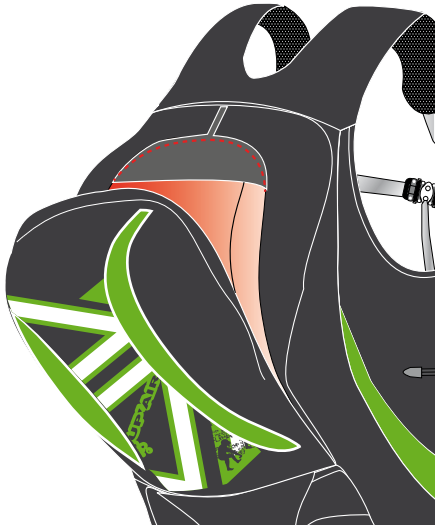
C BUMPAIR assembly

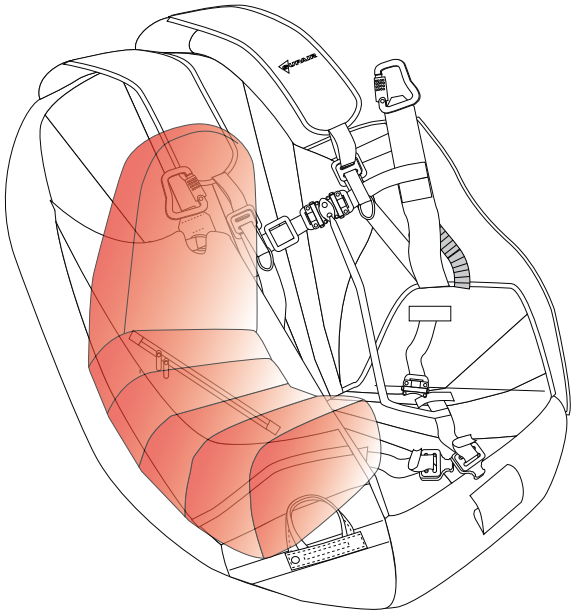
Accessing the Bumpair pocket.

1. Lift the Velcro® flap located above the shoulder strap.
2. Fully open the Zip found under the flap (not to be mistaken for the storage dorsal pocket zip).
3. Insert the Bumpair starting from its thickest section. Push it all the way in for a secured placement by following its contour by hand inside its housing.
4. Place the upper holding pocket hood over the Bumpair.
5. Fasten the Zip and finally the Velcro® flap.

Velcro®
Zip





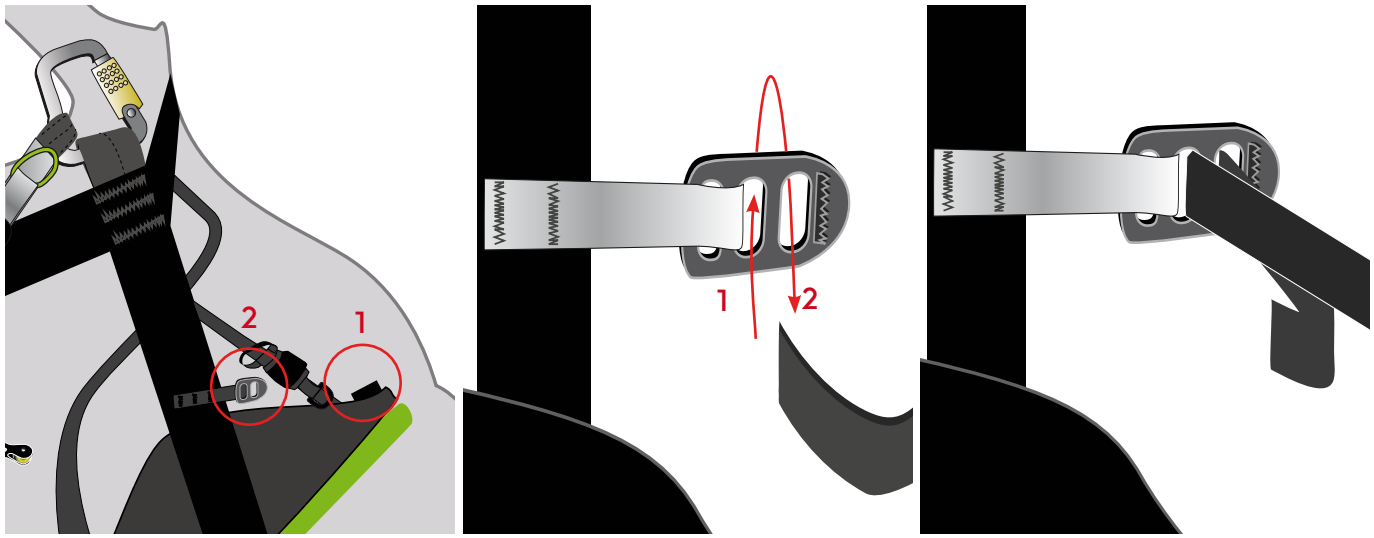


The BUMPAIR is only installed once. There is no need to take it out of its container afterward unless in case of a severe impact or water landing : it would then be necessary to inspect it for possible damage (tear, ripped fabric or stitching, etc.).

Accessories assembly

D Installing the foot-rest.

For each side, move the foot-rest strap inside the strap buckles located to the front and side of the seat, then through the adjustment buckles as seen in the following diagram :



E Installing the adjustment bridles holding sleeves.

Wrap the holding sleeve around the shoulder and the adjustable straps to prevent potential annoying flapping of the materials in flight.

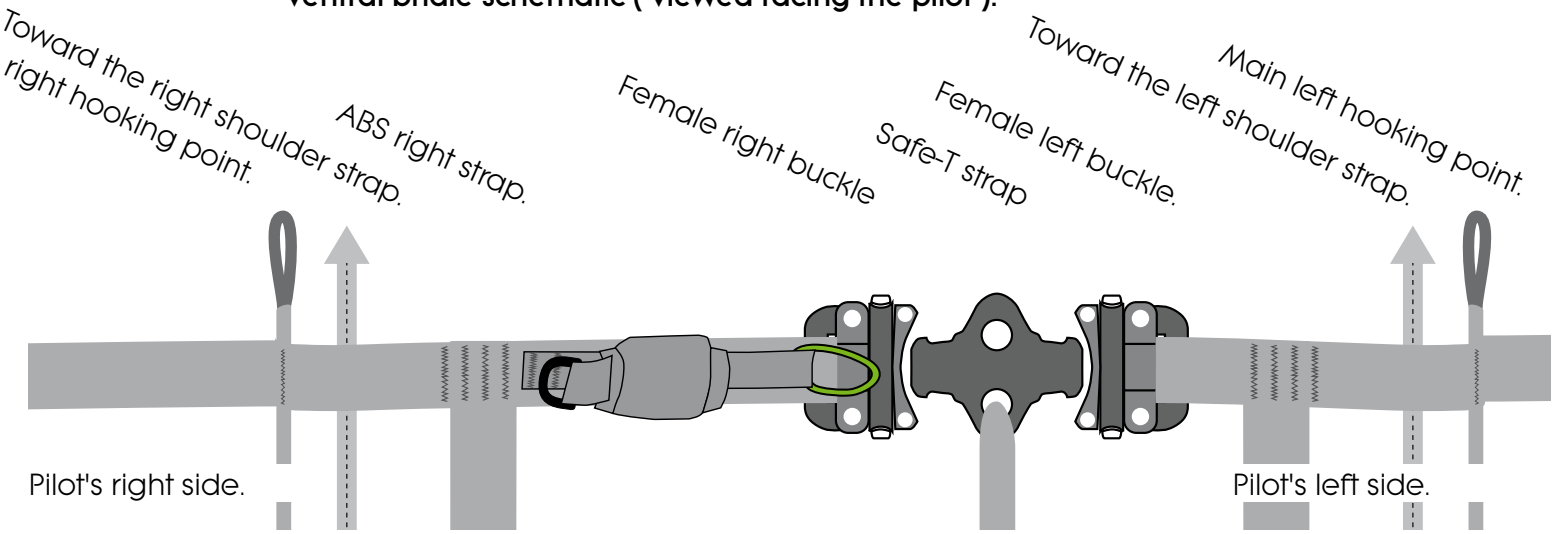
Accessories assembly

F Installing the ventral (front) protection.

Protection kit.

For better explanations in the following schematic, the protections were colored in red.

Ventral bridle schematic (viewed facing the pilot).

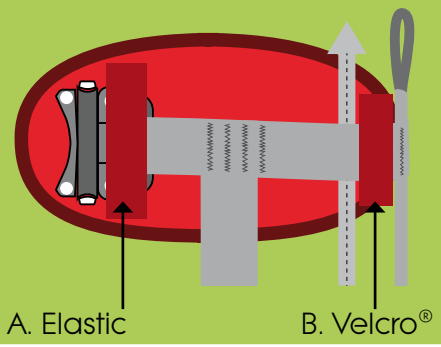


1. Installing part « A ».

Part « A » is attached to the chest strap, and left side of the pilot.

A. Push the female buckle through the elasticated loop.

B. Wrap and close the Velcro® around the horizontal strap between the main left attachment location and the shoulder strap.

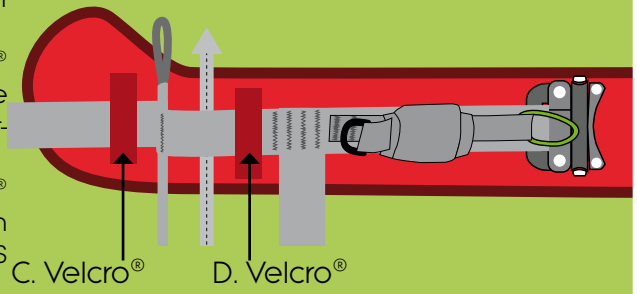


2. Installing part « B ».

Part « A » is attached to the chest strap, and right side of the pilot.

C. Wrap and close the Velcro® around the horizontal strap on the pilot's right side, behind the main attachment location.

D. Wrap and close the Velcro® around the horizontal strap between the right shoulder strap and the ABS strap.

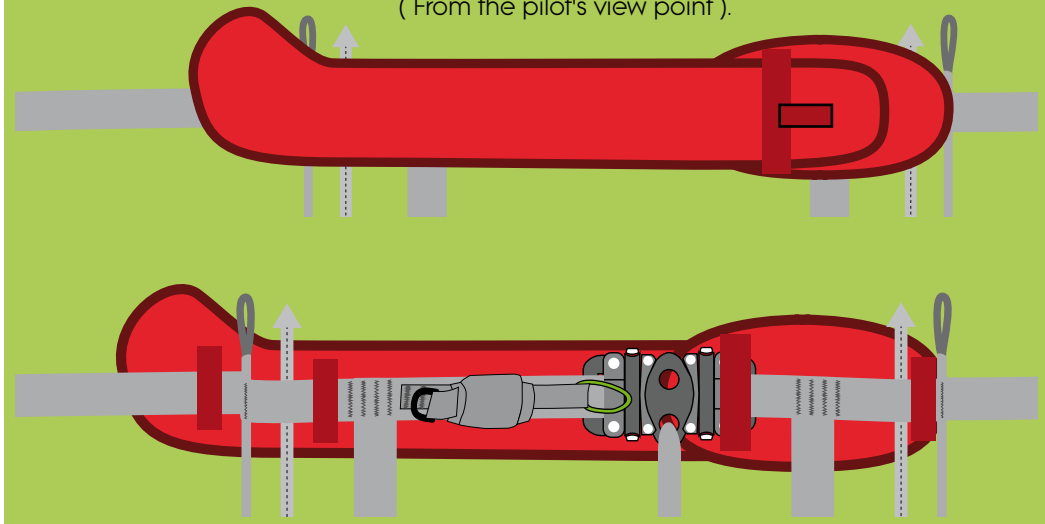


3. Closing the ventral (chest strap) strap.

Closing the buckles.

- Slide the part "B" excess in the elasticated loop found behind part "A" to tidy everything up. As such, the protection will adapt itself to the chest strap.

(From the pilot's view point).



Accessories assembly

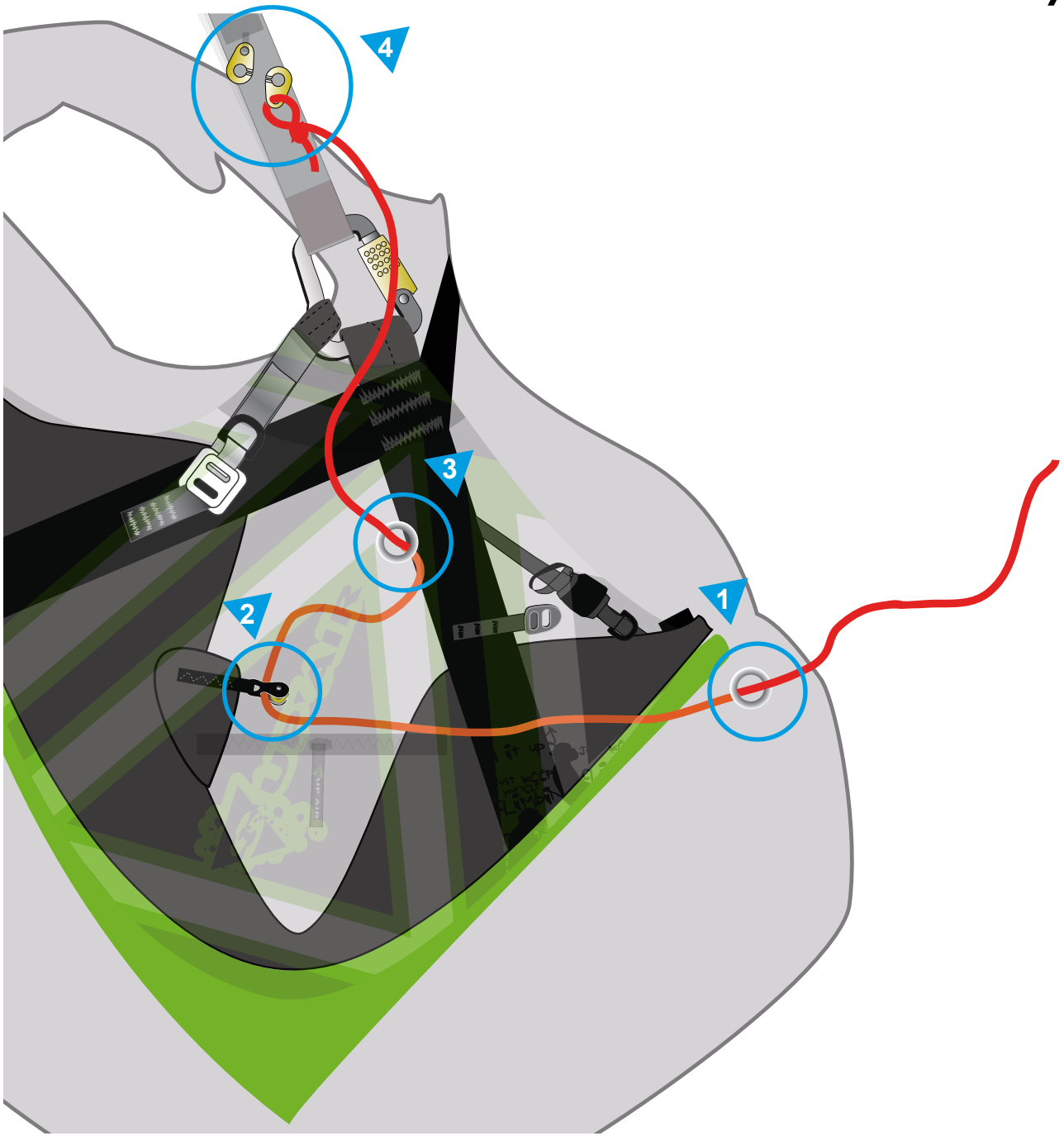
G Installing the speed-bar system.

1. Push the accelerator cord through the grommet located to the front, and right side of the seat. The cord rides through inside the harness between the bridles and the outer skirt.

2. Push the accelerator cord through pulley 2.

3. Pull the cord out though the grommet located beneath the main connection location.

4. Finally, hook the crimped clip to the cord and and make the connection to the paraglider.



Reserves assembly

Thank you for carefully reading the following! We advise you to have the initial rescue parachute installation done by someone knowledgeable with the process.

Warning before starting the installation procedure :

- The handle found to the pilot's right side, extracts the parachute located beneath the seat.
- The handle found to the pilot's left side, extracts the dorsal (rear) reserve parachute.

- If only one reserve parachute is installed :

- Right handed pilots : use the pocket beneath the seat.
- Left handed pilots : use the dorsal pocket.

If you install two reserve parachutes :

- Right handed pilots : install the dorsal reserve parachute first, then the other inside the container beneath the seat.
- Left handed pilots : install the reserve parachute beneath the seat first, then the other inside the dorsal reserve parachute container.

A Risers to rescue connection.

1. **« Y » risers : make a** loop to loop configuration and connect the risers to the harness using the 6 mm or 7 mm (x 2) stainless steel Maillons Rapides®
Standard risers : use a 7 mm stainless steel Maillon Rapide®.

B Handle connection to the reserve parachute pod.

A Reserve parachute handle :

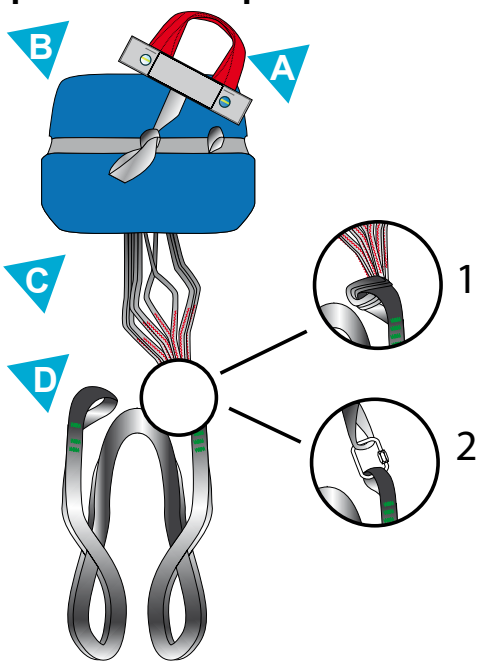
Attention : Use the handle ref. : A3 to install the reserve parachute beneath the seat. And the handle ref. : B2 for a dorsal reserve parachute installation.

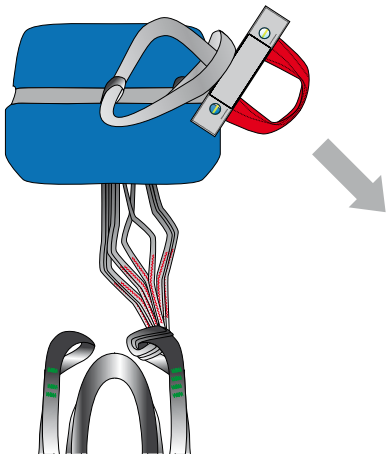
B Parachute properly packed in its pod.

C Parachute lines.

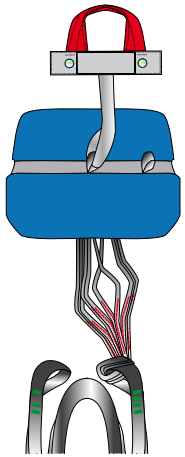
D Parachute risers (standard or "Y").

1. The handle must be connected to one of the POD buckles. For a dorsal parachute pocket installation : use the central loop-strap. For an installation beneath the seat : you can use either one (the central loop-strap is mostly used).





2. Push the handle through the central loop-strap, and make a « loop to loop » connection with the handle.



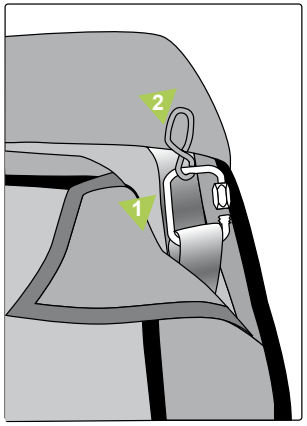
3. Tighten securely the "loop to loop" connection.

SUP'AIR manufactures its products in Europe. Most of the components used are **Made in Europe**.

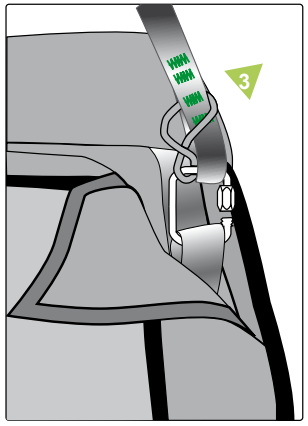
Installing the reserve parachutes.

B Rescue parachute riser connection.

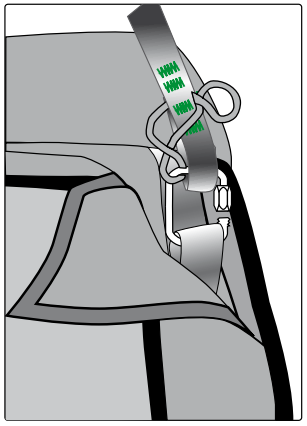
1. 1. Place the Maillon Rapide® (locking gate toward the top, facing outward) and push it through the bridle loop under the flap. Place the O ring in the Maillon and twist it in a figure 8 configuration.



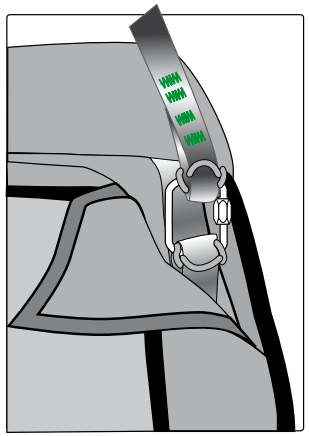
2. 2. Push the riser through the upper free "8" shaped toric ring and connect it to the Maillon Rapide®.



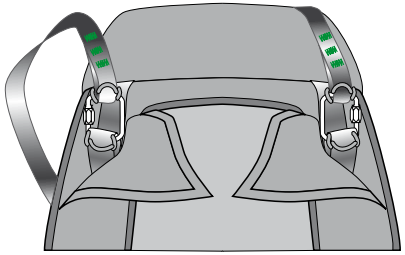
3. 3. Create a new twisted loop with the O ring before inserting it into the Maillon Rapide®.

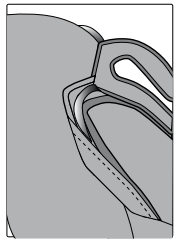


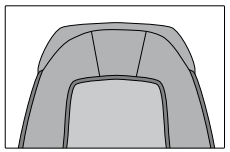
4. 4. Repeat procedures 1,2,3 with an additional O ring for the connection to the harness. Tighten the Maillon Rapide® locking gate securely, with pliers if necessarily.



5. 5. Tuck away the risers excess under the flaps.



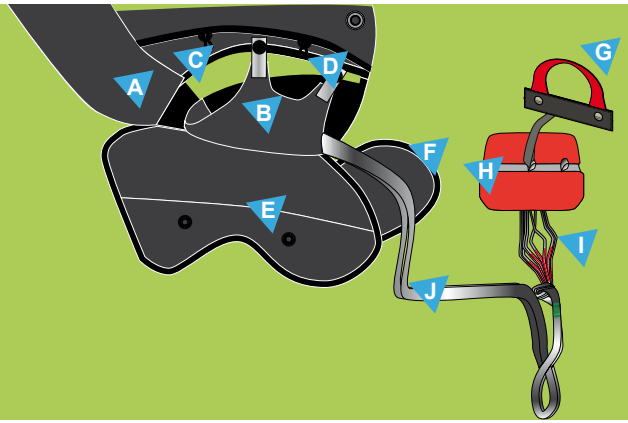




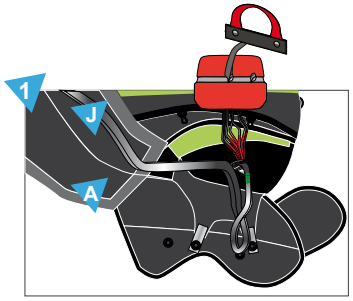
Regarding the second reserve parachute : complete the installation of the first rescue in its pocket. Repeat the procedure with a new set of Maillons Rapides®, by overlapping the second riser set on the initial arrangement. Install first the reserve parachute to which the handle is found opposed to your predilection side.

C Parachute installation inside the under-seat pocket.

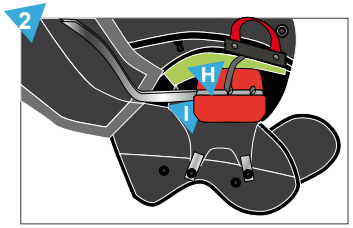
Specifics for the parachute pocket located beneath the seat :
- Lateral one flap pocket (+ one supporting inner flap).
- Cable locking system.
- Right side handle (ref.: A3).
- Volume : 3 to 6,5 liters.
- Adapted to the SUP'AIR reserve parachutes, or round Apex type rescues and Rogallo models.



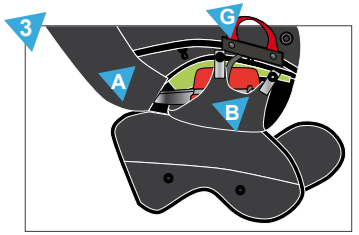
- A Harness-reserve parachute riser flap
- B Flexible flap.
- C Left cable.
- D Right cable
- E Lower flap
- F Lateral flap.
- G Handle (ref. : A3).
- H Parachute properly folded and packed inside its pod.
- I Additional reserve parachute risers.
- J Harness/reserve parachute risers.



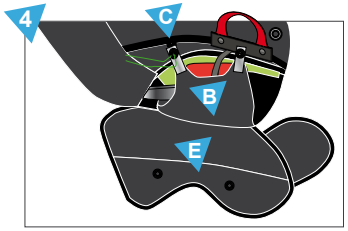
1. 1. Place the risers harness/reserve (J) underneath the flap (A).



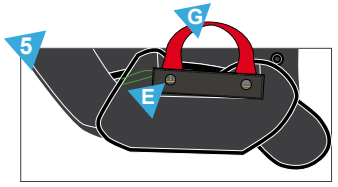
2. Inside the reserve parachute pocket, tuck in first the parachute line excess « I », then the parachute (inside its POD) « H » ; keep the handle outside the container.



3. 3. Close the flap (A) and correctly position the handle (G) then, fold the flexible flap (B).

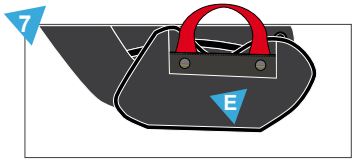


4. Using a small cord, push the line « C » through the left grommet of the flexible flap « B », and then through the grommet of the lower left flap « E ».

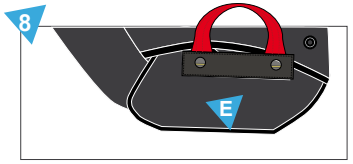


5. Push the left handle cable through the cord's loop to secure it all in place.

6. 6. Repeat the procedures 4 and 5 with the right grommets found on flats B and E.



7. 7. Connect the handle (G) Velcro strip, to the flap (E) receiving Velcro strip (male to female).Tuck away the handle extremities (G) in their respective housing on flap (E).



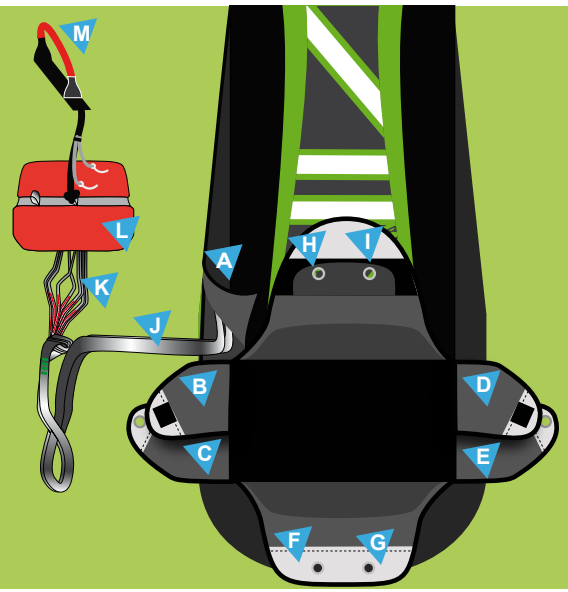
8. 8. Tuck away the flap (E) "bumps" in their respective housing.

Check the completed installation during a hang-test.

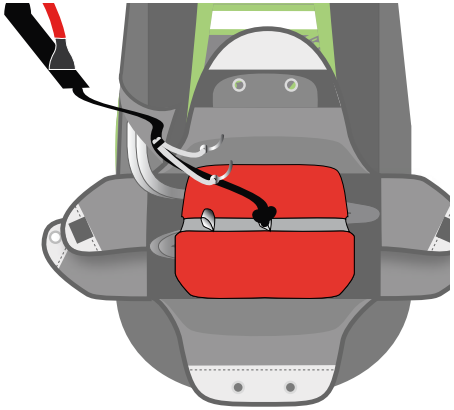
D Installing the reserve parachute inside the dorsale pocket.

Dorsal reserve pocket's main features :
- 6 flap dorsal reserve pocket.
- Locked mode via safety pins.
- Left handed reserve parachute handle ref. : B2).
- Volume : 3 to 5 liters.

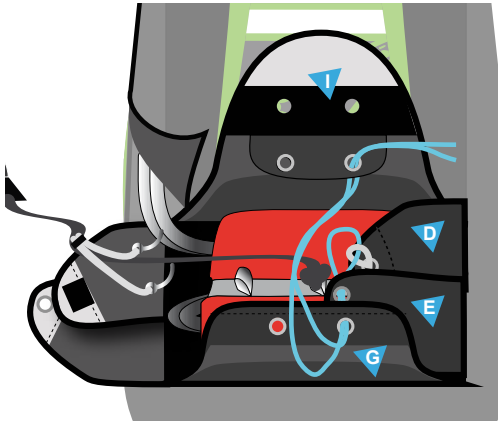
SUP'AIR, or other round Apex type reserve parachutes only (no Rogallo in this pocket !).



- A Parachute riser flap.
- B Upper left flexible riser flap.
- C Lower left flexible riser flap.
- D Upper right flexible flap.
- E Lower right flexible flap.
- F Left lower flap grommet.
- G Right lower flap grommet.
- H Left upper flap grommet.
- I Right upper flap grommet.
- J Parachute risers.
- K Excess reserve parachute lines.
- L Reserve in the POD.
- M Handle (ref : B2)



1. Place the risers « J » under flap « A ». Push them through between flap « B » and the upper flap in order to stow away the riser and lines excess from the reserve « K » to the bottom of the pocket.



3. Keep the handle outside the pocket. Using a small piece of line, push the flap « D » cord through the grommet « E », then « G » and finally « I ». Repeat the sequence with the flap « B » cord through the grommets « C,F and H ».

2. Close and secure the assembly by pushing the safety pins in their respective receiving loop-cords, then tidying up the handle bridle between flaps « B » and « C », maintain it in place with the help of the upper « C » flap stitched strap.

4. Tuck away the remaining upper flap end into the receiving neoprene pocket located on the lower flap, and fix the handle to the Velcro® in order to tidy up the assembly.

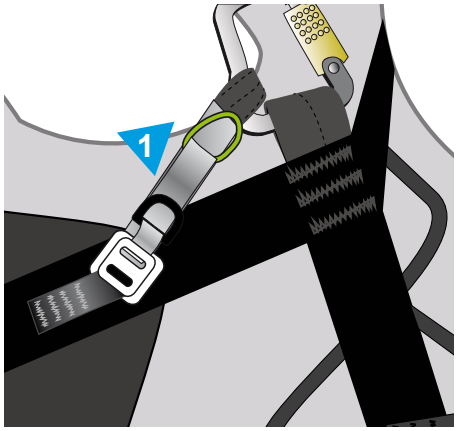
Check the completed installation during a hang-test.

SUP'AIR manufactures its products in Europe. Most of the components used are **Made in Europe**.

Adjusting the seating area.

1. Backrest tilt adjustment.

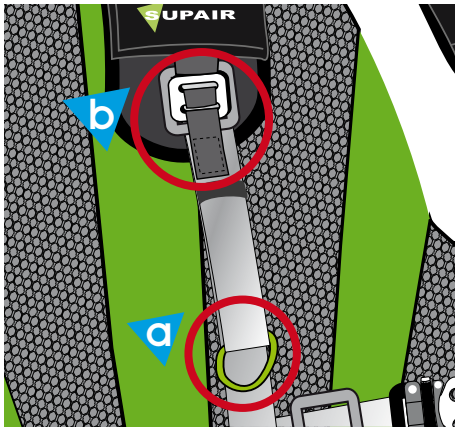
Adjust the angle by puling the black strap and bring the backrest closer to a vertical setting, or on the green cord to recline and pull away from the vertical setting.



2. Shoulder straps adjustments.

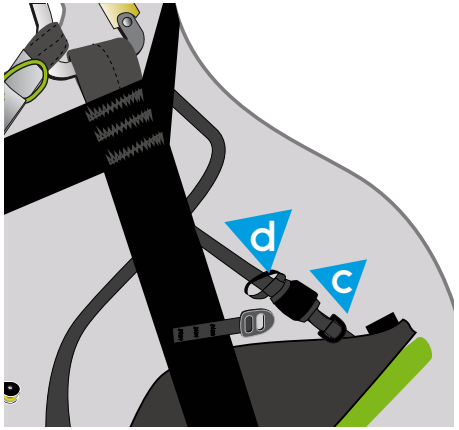
Tighten the shoulder straps by pulling cord « A » forward. Loosen by pulling rearward on strap « B ».

Resting on the shoulder straps contributes to the overall comfort level and must be precisely adjusted (not too tight or too loose).



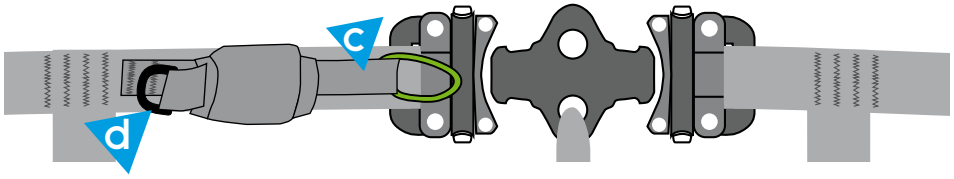
3. Adjusting the seating posture angle.

Adjust the seating posture angle by using the trims located on each side of the harness.
Tightening the adjustment (raises the knees height) by pulling the « C » buckle downward.
Loosen the adjustment by pulling buckle « D » upward.



4. Adjusting the chest strap or ventral strap.

Tighten the chest strap by pulling the green cord (tightening the ventral strap increases stability but heightens the risk of experiencing a « twist ».
Do not overtighten the chest strap adjustment.
Loosen the chest strap (ventral strap) by pulling on the black buckle « F » (loosening the ventral strap will upset the harness's stability but provide refined piloting opportunities).



Flight phases

Pre-Flight check.

- Check that the harness and the carabiners did are not damaged.
- Check thoroughly that the rescue handle's cable end has not got outside the snappers' flaps
- Check that your personal settings have not been modified.
- Check that all zippers and buckles are properly closed.
- Check that the speed-bar is properly adjusted and connected to the wing (refer to page 20).
- Check that no rigging line or other object comes in contact with the rescue parachute handle.

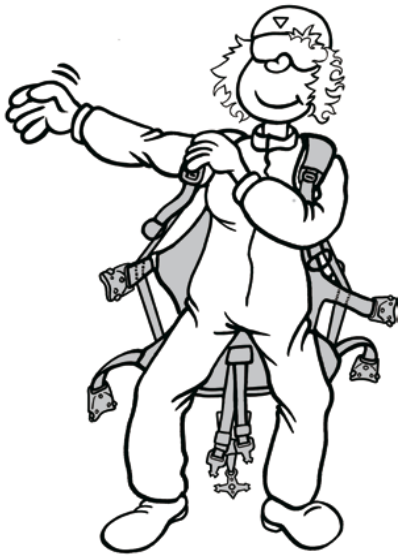
- After a thorough weather conditions analysis, when the decision to fly has been taken, put your harness on :
- Check for the carabiners to be securely locked.

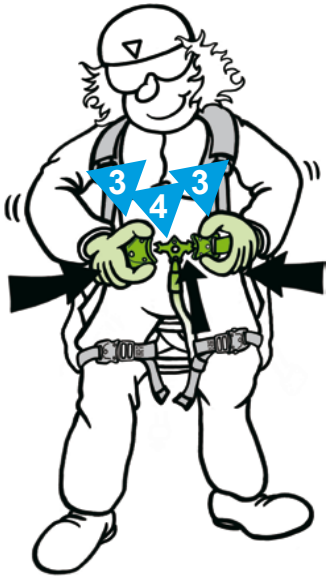
1 Thigh strap quick-release buckles (female).

2 Thigh strap quick-release buckles (male).

4 Safe-T-Bar

3 Chest strap quick-release buckles (female).





Flight phases

Take-off

Check that you are securely fastened inside your harness with its speed-bar properly connected, so not to impede your running phase.

Do not release your hands from the toggles when close to the ridge.

In flight

Please set the distance between the two carabiners according to aerology conditions and to the wing manufacturer's recommendations.

Tightening provides more stability but less harness piloting efficiency. Beware of the increased risk of riser twisting. On the contrary, loosening the strap provides more efficiency but can be dangerous in turbulent aerology (increased risk of falling towards the collapsed side of your glider).

Flight behavior : The ACRO3 is a harness specially made for paragliding acrobatics. It is a precis, stiff and reactive, giving you maximum control during acrobatic figures.
Keep in mind that we want to see you practice this specialty with peace of mind and for as long as possible. The best gear will not protect you against over confidence or a cascade of mishaps.

Speed-bar use

We recommend a careful use of the speed-bar due to the increased risk a possible frontal collapse. Please carefully read your glider's operation manual.

To use the speed-bar, maintain one foot on the footrest then with the other, place your foot onto the centering space and push the first bar.

Landing

Straighten yourself in your harness and adopt a running posture to dissipate the horizontal speed.

Do not land whilst in the seated position, this is dangerous.

Using the reserve parachute.

We strongly advise you to check frequently the location of the reserve parachute handle location. To do this, we recommend that you lower your right hand following the risers. This movement should be done without looking. By doing so, you will maximize your chances of a rapid extraction if something went wrong and throwing the reserve parachute was called for.

Evaluate your height over the ground. If you have a lot of altitude, it may be better to attempt a wing recovery to normal flight. But if in any doubt, then deploy your rescue parachute.

Deploying a rescue parachute should be done only in an emergency.

With a strong, lateral and then vertical tug, pull the handle towards you and then throw the whole parachute (including the bag and handle) as hard as hard as possible away from the harness and an unobstructed trajectory. As soon as the parachute deploys, haul down the glider by pulling as symmetrically as possible on the risers (C or d D) or on the brakes.

Be prepared to land by adopting an upright position, with knees together and legs slightly bent. Prepare to roll down with pivoting shoulders. PLF (Parachute Landing Fall).

The second reserve parachute must only be deployed when subsequent problems occur with the main and first rescue system sequence.

Mandatory controls

Mandatory biannual check

In addition to the monthly check, it is imperative to proceed with the verification of the following points :

Annual check

An opening and repacking of the rescue parachute located beneath the seat at an approved specialized facility or authorized competent person.

Maintenance

Washing and harness maintenance.

It is a good idea to wash your harness from time to time. We recommend using a soft solvent (such as soap), use a brush and rinse thoroughly.
DO NOT use chemicals such as aggressive detergents or strong solvents as they may deteriorate the webbing, stitching and harness fabrics.

The zip fasteners should be lubricated from time to time, using a silicon spray only.

Storage and transport.

When not using your harness, store it inside your paragliding rucksack, in a dry, cool and clean place, protected from UV exposure. If your harness is wet, please dry it thoroughly before storing.
During transport, protect the harness from any mechanical or UV deterioration (use a bag). Please avoid long transports in wet or humid conditions.

Product longevity.

Independently from the pre-flight checks, you must open and unfold your rescue parachute once every 6 months.
Once every 2 years, you need to perform a complete harness check :

- webbings (no wear, tear or material unraveling, no unwanted folds)

- The threads making the webbing and fabrics used in the ACRO3 have been selected to offer the best possible light weight to longevity ratio. Nonetheless, in some conditions, after long term exposure to UV and/or significant abrasion or exposure to chemicals, it is compulsory to have your harness's integrity checked at a certified repair centre. Your safety depends on it.

- These carabiners must never be used for anything else than paragliding (not for climbing, no towing, etc.).

- Carabiners must be replaced by new ones every five (5) years by identical models or models recommended by the manufacturer (SUPAIR).

Repair

Though we use the highest quality materials, it is possible that your harness may eventually deteriorate through general use. If showing any signs of significant wear and tear, you should check it and have it repaired at a certified repair centre if necessary.

SUP'AIR also offers the possibility for its products to be repaired beyond the end of the warranty period. Please contact us either by telephone or by E-mail sav@supair.com in order to receive a quotation.

Materials

Fabrics
- CORDURA®
- CORDURA® RIPSTOP

Webbings
- Polyamide 20 mm (500 DAN)
- Polyester 25 mm (1250 DAN)
- Polyester 28 mm (1500 DAN
- Polyester 43 mm (2200 DAN)

Under the seat parachute risers
- Polyester 20 mm (1600 DAN)

Recycling

All our materials are selected for their technical and environmentally friendly characteristics. None of thre components found in our harnesses will harm the environment. Most of them are recyclable.

If you estimate that your harness has reached the end of its lifespan, you can then separate the plastic from the metallic parts and apply up-to-date sorting rules in effect in your community. As for the fabric parts, we will advise you to contact your local specialized recycling center(s).

Warranty

SUP'AIR takes the greatest care in the design and production of its product line, hence, offers a five (5) years limited warranty from the purchase date against any manufacturing defect or design issues occurring during normal use. Any damage or degradation resulting from incorrect or abusive use, abnormal exposure to aggressive factors, including, but not limited to; high temperature, intense sun exposure, high humidity etc., will invalidate this warranty

Disclaimer

Paragliding is an activity requiring, skills, specific knowledge and sound judgement. Be safe by learning in certified schools, subscribe and obtain an adequate insurance policy as well as a flying license while always making sure your flying skills are up to the task in various weather flying conditions. SUP'AIR cannot be held responsible for your paragliding decisions or activities.

This SUP'AIR product has been designed exclusively for paragliding. Any other activity such as skydiving or BASE jumping is absolutely forbidden.

Pilot's gear

This is essential that you carry a helmet, suitable boots and clothing. Carrying a reserve parachute suitable for your weight and correctly connected to your harness is also very important.

Complements/Accessories

Optional fully compatible accessories are available for your ACRO3 harness.

Function	Code	Description	Weight
Rescue parachute	PARSUPAIR08 S	Parachute SUP'AIR light size S (Small) (PTV max 85 kg)	1.21 kg
	PARSUPAIR08 M	Parachute SUP'AIR light size M (Medium) (PTV max 110 kg)	1,51 kg
	PARSUPAIR08 L	Parachute SUP'AIR light size L (Large) (PTV max 135 kg)	1,18 kg
Solo standard reserve parachute bridle.	ELESOLOSTD	Solo standard reserve set parachute bridles (one pair – two independent bridles).	120 g
Maillons for rescue connection.	MAILCARIN6	6 mm stainless steel Maillons Rapides® (set).	42 g (Unit)

All necessary technical information comes with the product and/or is easily accessible via our website at **www.supair.com**

Photo : Julian Cisterna, Pilote : Félix Rodriguez

Maintenance manual

This page will help you to record all the life stages of your ACRO3 harness.

Serial number :

Purchase date	
Owner's name	
Name and stamp of the shop	

☐ Care ☐ Resale	
Date	
Workshop's name/ Buyer's name	

☐ Care ☐ Resale	
Date	
Workshop's name/ Buyer's name	

☐ Care ☐ Resale	
Date	
Workshop's name/ Buyer's name	

☐ Care ☐ Resale	
Date	
Workshop's name/ Buyer's name	

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SUP'AIR manufactures its products in Europe. The majority of the components used come from Europe.

Acro 3